The following components have been identified as located within the boundaries of the Water Preserve Areas. The component descriptions for Alternative 3 have been modified from Alternative 2. These components have been outlined in the component descriptions in a very conceptual way. Some additional level of incidental design has been expended on several of the components in order to allow them to be included in the subregional models.

Acme Basin B Discharge (OPE)

Geographic Region: Water Preserve Area – Palm Beach County

Component Title: Acme Basin B Discharge – SEE WPA COMPONENT MAP 2

Purpose: Improve water quality discharge into WCA 1, attenuate peak flows and route discharge to regional storage impoundments or STA-1E.

Operations Summary: There are two operating schemes for the Acme Impoundment: 1) during storm-event when run-off is high (> 375 cfs), and 2) during non-storm events or when runoff is low (<375 cfs).

1) Runoff from storm events within Acme Basin B is sent to a 533-acre impoundment with a maximum storage depth of 8 feet. Runoff collected in the impoundment may subsequently be captured by ASR injection wells. When the impoundment is at capacity or if the runoff rate is high, up to 125 cfs of runoff is directed north to the C-51 Canal via Acme C-8 canal.
2) During non-storm events, water from the ASR and impoundment is used to meet local and regional water supply needs. There are two demands: (1) LWDD and (2) Agricultural Reserve Impoundment, if storage capacity is available. Water deliveries are distributed to LWDD E-1 Canal to meet LWDD demand or directed south to the Agricultural Reserve Impoundment. If these two demands are met, water is discharged during non-storm events from the impoundment into an improved Acme C-25 Canal and directed eastward to LWDD E-1 Canal.

Detailed Design and Operations:

1) Impoundment: Approximately 533 acres with a maximum storage depth of 8 feet located in Section 34.
2) Inflow: The inflow pump, capacity 375 cfs, provides water from the Acme C-25 canal when the stage reaches 14.0 ft NGVD and ceases when the stage drops to 13.0 ft NGVD or the depth in the impoundment reaches 8.0 feet (24.3 ft NGVD).
3) Discharge: An existing gravity discharge structure releases water to C-51 Canal or LWDD E-1 canal. A 125 cfs capacity pump station is located in Acme C-8 canal to assist in conveyance to the C-51 Canal. A 100 cfs capacity pump station is located on Acme C-25 at S.R. 7 to assist conveyance into LWDD E-1 Canal. Discharges occur when the LWDD E-1 Canal stage is $\leq$ 15.6 ft NGVD, and ceases when the elevation is $\geq$ 15.8 ft NGVD.
4) The impoundment includes 5 ASR injection wells with a capacity of 5 MGD each or a total capacity of 25 MGD (38 cfs). The source of water to the ASR is horizontal wells and toe drains. The horizontal wells are located along the north, east and west levees surrounding the impoundment. When the impoundment stage is at 17 ft NGVD (1 ft above ground) or more, the ASR injection wells operate. Conversely, the ASR injection wells cease when the water depth is less than 17 ft NGVD.
5) The Acme C-26 canal along the south boundary of the impoundment is plugged at the east and west ends of the impoundment. Seepage from the impoundment along this canal reach is uncontrolled and is allowed to move southward into northern Strazzulla.

6) Existing canals along the north (C-25 Canal), east (C-7 Canal) and west (C-6 Canal) boundaries of the impoundment are used for both seepage collection and runoff conveyance. Seepage collected is returned to the impoundment.
7) A sump area containing approximately 15% of the total area of the impoundment will be included in the impoundment. The sump area is maintained at all times with at least 3 feet of water depth.

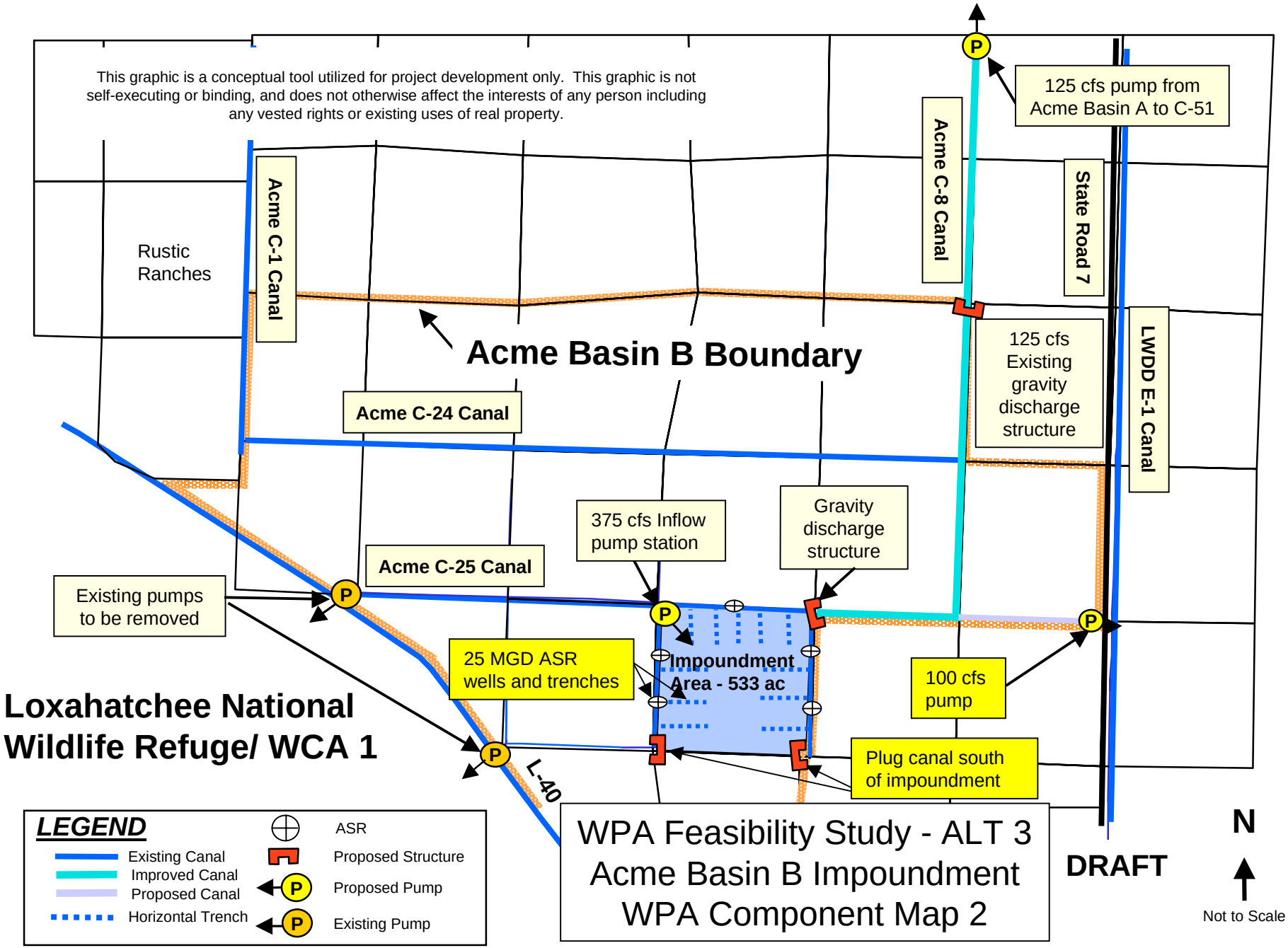
Location: East of the Loxahatchee National Wildlife Refuge (WCA 1) at the southeastern end of the Acme Improvement District.

Counties: Palm Beach

Summary of modifications from Alternative 2: Five ASR production wells with a total capacity of 25 MGD are added. Horizontal trenches and nearby groundwater provide source water for the ASR wells. Operations of the impoundment changes to incorporate the ASR storage. Separate seepage canals surrounding the impoundment are removed. Existing Acme canals (C-6, C-7 and C-25) will be used to control seepage and convey runoff. The Acme C-26 canal reach that borders the south side of the impoundment is plugged. Water deliveries up to 100 cfs to Agricultural Reserve Impoundment via LWDD E-1 Canal is allowed off-peak if canal capacity is available.

Assumptions and Related Considerations:

1) Existing flood protection is maintained.
2) Runoff from Basin A increases from the currently permitted 2/3” per day to 1” per day. The additional 1/3” per day volume for Basin A (125 cfs) is made up of Basin B runoff routed to Basin A. Additional flows are directed north to the C-51 Canal through the permitted discharge facilities.
3) Water quality from Basin B does not adversely effect volumes and loads to STA-1E above what is designed for Acme Basin A at 1” per day. Peak discharges for Basin B do not increase Basin A's discharges to C-51W greater than 1" per day.
4) Land is available for attenuation storage and canal upgrades (if necessary).
5) Sufficient peak flow attenuation storage is provided to maintain existing flood protection.
6) Off peak discharge is sent east to C-51, if STA-1E does not have the treatment capacity to handle this extra volume/load.
7) Acme Improvement District is evaluating their system to determine what internal changes need to be made to enable 125 cfs of flow through Basin A via the Acme C-6, C-7 and C-8 canals to the C-51 Canal.
8) Recovery rate of 70 percent for water stored by the ASR.
9) Water available for discharge is released to the LWDD during off-peak times before LWDD withdrawals from WCA-1 are made via G-94A, G-94B and G-94C structures.


This graphic is a conceptual tool utilized for project development only. This graphic is not self-executing or binding, and does not otherwise affect the interests of any person including any vested rights or existing uses of real property.
Rustic Ranches
Acme C-1 Canal
Acme Basin B Boundary
Acme C-8 Canal
State Road 7
LWDD E-1 Canal
125 cfs pump from Acme Basin A to C-51
125 cfs Existing gravity discharge structure
Acme C-24 Canal
Acme C-25 Canal
375 cfs Inflow pump station
Gravity discharge structure
Existing pumps to be removed
25 MGD ASR wells and trenches
Impoundment Area - 533 ac
100 cfs pump
Plug canal south of impoundment
L-40
Loxahatchee National Wildlife Refuge/ WCA 1
P
LEGEND
Existing Canal
Improved Canal
Proposed Canal
Horizontal Trench
ASR
Proposed Structure
Proposed Pump
Existing Pump
WPA Feasibility Study - ALT 3
Acme Basin B Impoundment
WPA Component Map 2
DRAFT
N
Not to Scale

Protect and Enhance Existing Wetland Systems along the Loxahatchee National Wildlife Refuge including the Strazzulla Tract (OPE)

Geographic Region: Water Preserve Area – Palm Beach County

Component Title: Protect and Enhance Existing Wetland Systems along the Loxahatchee National Wildlife Refuge (LNWR) including the Strazzulla Tract - SEE WPA COMPONENT MAP 3

Purpose: Provide a hydrological and ecological connection to the Loxahatchee National Wildlife Refuge and expand the spatial extent of protected natural areas.

Intent: The additional lands to be purchased combined with the lands acquired are acting as a buffer between higher water stages to the west and low water stages to the east that must be maintained for flood protection. This increase in spatial extent provides vital habitat connectivity for species that require large unfragmented tracts of land for survival. It also contains the only remaining cypress habitat in the eastern Everglades and one of the few remaining sawgrass marshes adjacent to the coastal ridge. This area provides an essential Everglades landscape heterogeneity function.

Operations Summary: Strazzulla is a rainfall driven system with minimal structures. A control structure in the LWDD L-23W canal maintains water levels in the south section of Strazzulla based on stages in the L-40 borrow canal A pump station at the northwest corner of Strazzulla withdrawals water from the L-40 Canal to maintain a minimum groundwater elevation in northern Strazzulla.

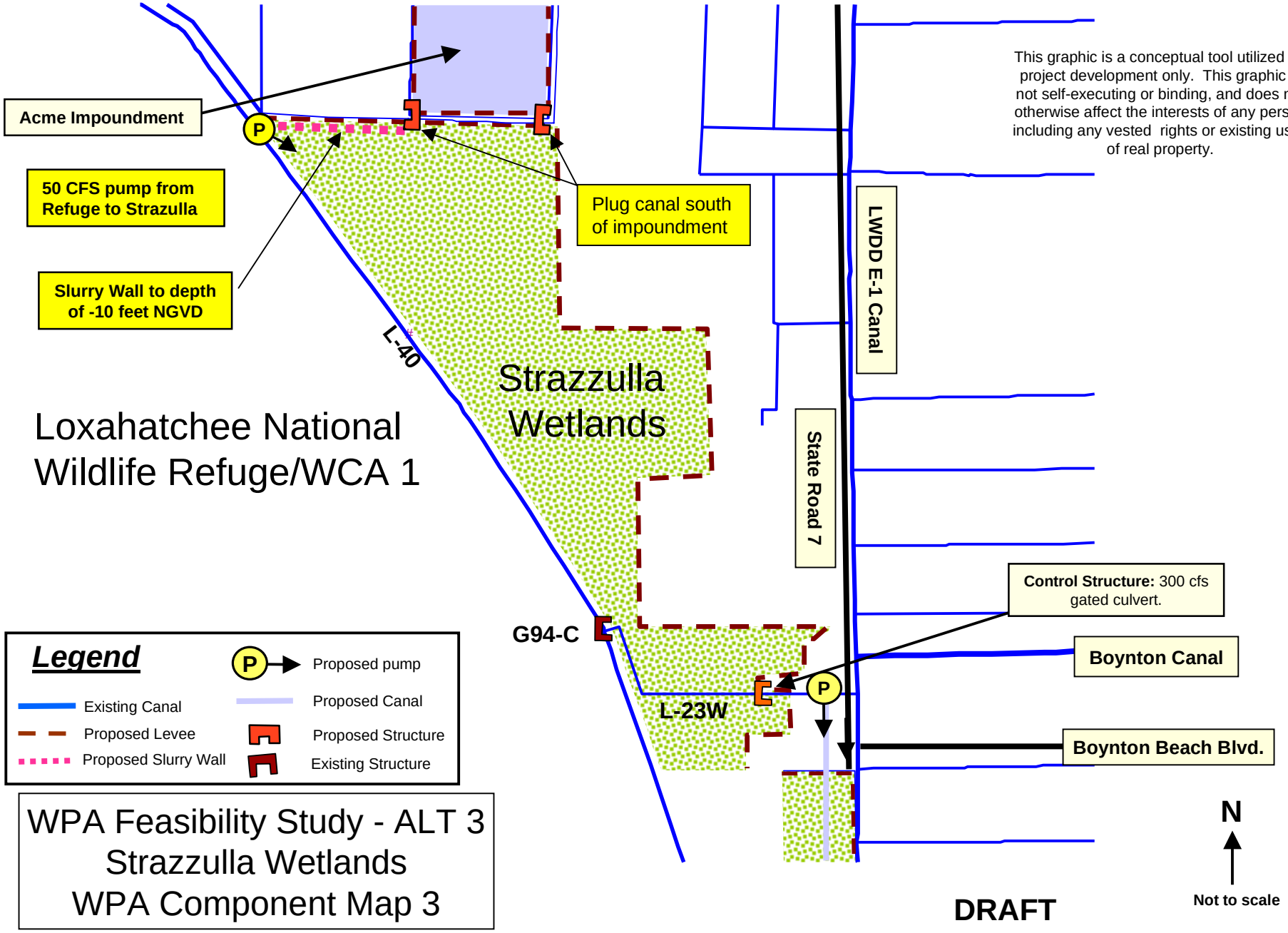
Detailed Design and Operations:

1) A three-foot high berm is constructed along the northern and eastern boundaries of the property to reduce runoff losses to the east and allow greater inundation depths.
2) A slurry wall is constructed along the northwest boundary of Strazzulla to reduce seepage from Strazzulla. The slurry wall begins at the L-40 levee and extends east to the western plug in the Acme C-26 canal (length approximately 1 mile). The wall extends to a depth of –10 feet NGVD.
3) A 300 cfs control structure in LWDD L-23W Canal consists of gated culverts. The structure controls the LWDD L-23W canal at the same elevation as the L-40 borrow canal when it is ≥ 15.8 feet NGVD. When L-40 is ≤ 15.8 feet NGVD it is operated to control L-23W at the same elevation as the LWDD canal system.
4) Inflows structure: A 50 cfs capacity pump station located at northern end of Strazzulla will be used to maintain minimum groundwater elevations higher than 1 foot below the ground surface. The pump station provides water from the L-40 canal.
    - When WCA-1 marsh gage at Site 1-8T is ≥ 15.8 ft NGVD and groundwater elevation in Strazzulla ≤ 14.8 ft NGVD, the pump operates.
    - When groundwater elevation in Strazzulla ≥ 15.8 ft NGVD or WCA-1 marsh gage at Site 1-8T is < 15.8 ft NGVD, the pump ceases.

Location: East of WCA 1 in central Palm Beach County
Counties: Palm Beach

Summary of modifications from Alternative 2: A slurry wall extends from the L-40 Levee to the western plug in Acme C-26 Canal at Acme B Impoundment penetrating to a depth of –10 ft NGVD. The purpose of the wall is to reduce or eliminate seepage from Strazzulla northward to Acme B Basin. Seepage from Acme B Basin Impoundment moves southward into northern Strazzulla by disconnecting Acme C-26 Canal along the southern border of the impoundment. Added deliveries from the L-40 Canal into northern Strazzulla to maintain groundwater elevations higher than 1 foot below ground surface.

Assumptions and Related Considerations:
1) Water supply deliveries to LWDD via L-23W Canal are not interrupted by the operation of the proposed control structure.
2) This feature also includes the acquisition of approximately 3335 acres of land adjacent to WCA 1 including the Strazzulla Tract.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Acme Impoundment
50 CFS pump from Refuge to Strazulla
Slurry Wall to depth of -10 feet NGVD
Plug canal south of impoundment
L-40
Strazzulla Wetlands
Loxahatchee National Wildlife Refuge/WCA 1
LWDD E-1 Canal
State Road 7
Control Structure: 300 cfs gated culvert.
Boynton Canal
Boynton Beach Blvd.
G94-C
L-23W
P
Legend
Proposed pump
Existing Canal
Proposed Canal
Proposed Levee
Proposed Structure
Proposed Slurry Wall
Existing Structure
WPA Feasibility Study - ALT 3
Strazzulla Wetlands
WPA Component Map 3
DRAFT
N
Not to scale

Component VV

Geographic Region: Central Eastern Palm Beach County

Component Title: Agricultural Reserve Impoundment – SEE WPA COMPONENT MAP 4

Purpose: Increase water supply for central and southern Palm Beach County by capturing and storing water currently discharging to tide.

Operations Summary: The impoundment stores excess water pumped out of the western portions of the C-15 and C-16 basins located in the LWDD. Water releases are made back into LWDD to maintain canal stages during the dry season. Similar to the modeled base cases, regional water is supplied to the LWDD when water levels in their canals fall below 15.8 feet NGVD. Water is backpumped into the impoundment when water levels are above 16.0 feet NGVD in the LWDD system canals.

The Agricultural Reserve Impoundment has an area of 537 acres with a maximum storage depth of 12 feet. ASR capacity improves water supply delivery capabilities during dry seasons and droughts. Ten 5-MGD capacity ASR injection wells are proposed with a total injection and recovery capacity of 50 MGD (75 cfs). Water discharges from the impoundment to meet local water supply demands before recovering water from the ASR system.

Detailed Design and Operation:

1) The impoundment is 537 acres with a maximum depth of 12 feet (6444 acre-feet). The impoundment is located north of Atlantic Avenue and west of SR 7.
2) A new delivery canal directs flows from the LWDD E-1 Canal south to the impoundment via a 400 cfs capacity pump station located on LWDD L-23W Canal. A 3-foot high berm is constructed east of the canal and west of SR 7 to mitigate seepage. A siphon structure is located at the crossing of the new delivery canal and LWDD L-30
3) Inflows: Inflow capacity of 650 cfs is provided by two pump stations: 1) a 400 cfs capacity pump station in the northeast corner of the impoundment pulls from the delivery canal, and 2) a 250 cfs capacity pump station in the southeast corner of the impoundment pumps from a new canal that connects to LWDD E-1 and L-34 canals.
    - Both pump stations operate when stages reach 16.2 feet NGVD and cease when stages drop to 16.0 feet NGVD.
4) Discharges: A gravity control structure supplies water to LWDD canal system at a rate up to 500 cfs with 4 feet of hydraulic head. The structure consists of four 6-foot diameter gated culverts. The structure is located in the southeast corner of the impoundment connecting to LWDD E-1 and L-34 canals.
    - Water is discharged to the LWDD E-1 Canal when the stage falls below 15.8 feet NGVD.
5) An emergency overflow spillway is designed as a lower section of the levee to maintain impoundment levee integrity. The emergency overflow spillway invert elevation is 1 foot above the maximum normal operating elevation. The spillway will discharge into the LWDD E-1W-N Canal.

6) Seepage collects and returns to the impoundment by a peripheral canal with a 200 cfs capacity pump station. The control elevation of the seepage collection canal is 16.0 feet NGVD.
7) Ten 5-MGD ASR wells with a total capacity of 50 MGD (75 cfs) operate within the impoundment. Water from horizontal supply wells below the impoundment is injected into the ASR wells when the elevation in the impoundment is above 17.7 ft NGVD (1 foot depth). ASR injection wells are off when the impoundment elevation is below 17.7 ft NGVD.

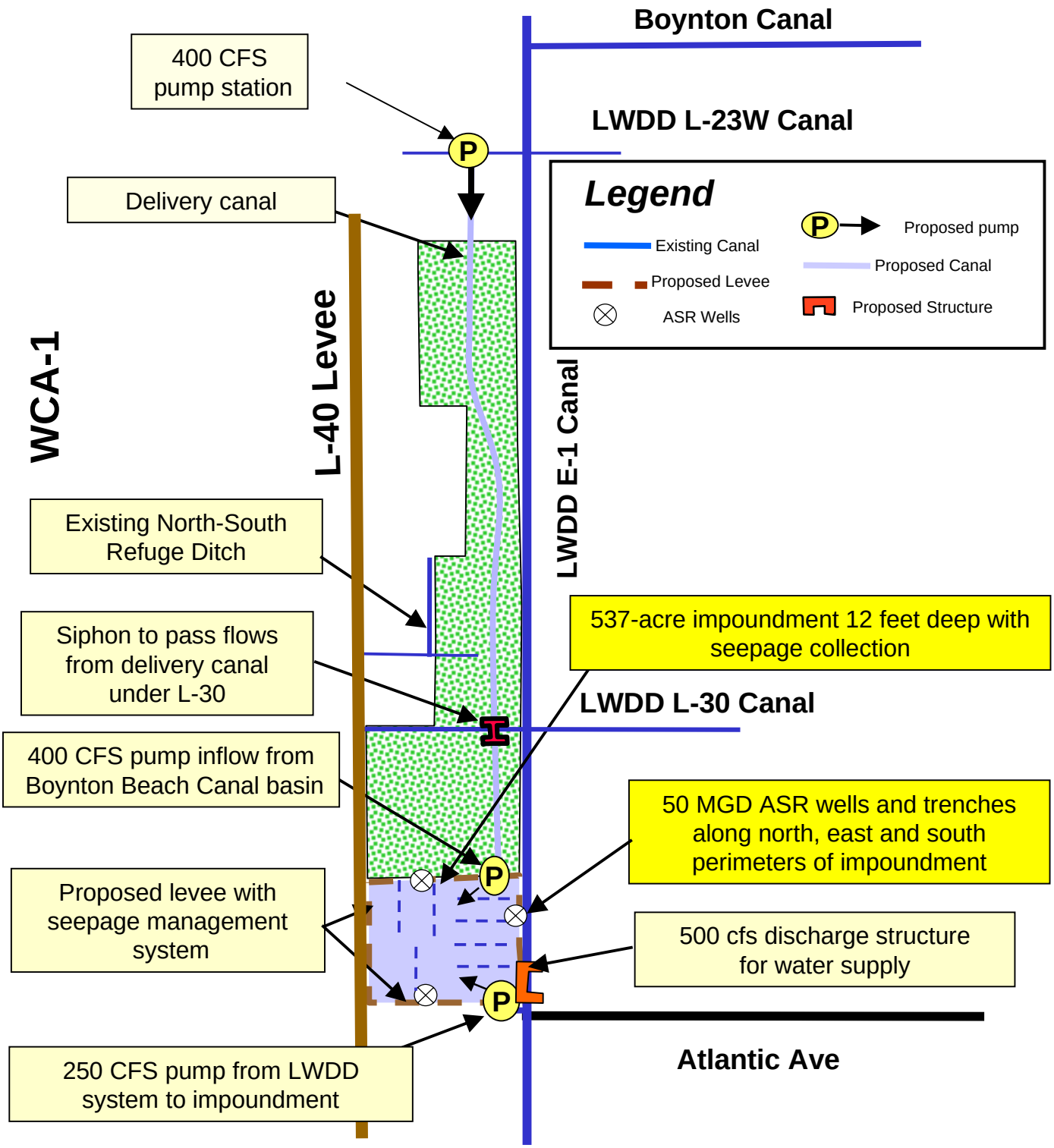
Summary of modifications from Alternative 2: Impoundment area consists of one compartment. The size is reduced from 924 acres to 537 acres. Total inflow pump rate is also reduced to 650 cfs. ASR capacity is reduced from 75 MGD to 50 MGD because of reduced footprint.

Location: The western portion of central Palm Beach County adjacent to WCA 1 and south of Boynton Beach Boulevard.

Counties: Palm Beach

Assumptions and related considerations:

1) Water available for discharge is released to the LWDD during off-peak times before LWDD withdrawals from WCA-1 are made via G-94A, G-94B and G-94C structures.
2) Conveyance may need to be improved in the LWDD canal system to pass the proposed 500 cfs discharge from the impoundment.
3) No operational changes in the LWDD.
4) Recovery rate of 70 percent for water stored by the ASR.
5) If the area between the Refuge and SR 7 cannot be acquired, then an additional structure may be required at the southwest corner of the impoundment to maintain flood protection for this area during peak storm events.
6) The FP&L power lines on the eastern side of the impoundment will either be relocated or flood protected.



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Not to Scale

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WPA Feasibility Study - ALT 3
Agricultural Reserve Impoundment and ASR
WPA Component Map 4

Component M

Geographic Region: Water Preserve Area - Palm Beach County

Component Title: Hillsboro Impoundment (aka Site 1) – SEE WPA COMPONENT MAP 5

Purpose: Water supply storage impoundment to supplement water deliveries to the Hillsboro Canal during the dry season.

Operations Summary: The impoundment stores excess water pumped from the Hillsboro Canal and North Springs Improvement District. Water releases are made back to the Hillsboro Canal to help maintain canal stages during the dry season. Water discharges to the Hillsboro Canal first from the Impoundment, then from ASR wells when stages in the Hillsboro Canal are less than 7.0 feet NGVD. If water is not available in the impoundment or ASR storage, existing rules for water delivery to this region apply. ASR is used in conjunction with the impoundment to improve water supply during dry seasons and droughts.

For Alternative 3, the impoundment remains compartmentalized into three cells; two are located north of the Hillsboro Canal and one south. The total acreage of the impoundment remains the same as Alternative 1 (2246 acres). North Springs Improvement District (NSID) discharges are redirected north to the southern compartment of the impoundment via the L-36 borrow canal and a proposed pump station.

Detailed Design and Operation:

1) Impoundment: 2246 acres with a maximum depth of 6 feet located north and south of the Hillsboro Canal. A seepage canal running along the east side of the impoundment directs seepage south to the Hillsboro Canal through a gated culvert (100-cfs capacity). Seepage south of the Hillsboro Canal collects in the relocated L-36 borrow canal and discharges to the Hillsboro Canal through the relocated S-39A structure.
2) Inflow: Total pump capacity = 2000 cfs.
    - 1500 cfs capacity pump station in the Hillsboro Canal operates when the stage Hillsboro Canal equals 7.7 feet NGVD and ceases when the canal stage equals 7.0 feet NGVD. The pump also ceases operation when the stage in the impoundment north of the Hillsboro Canal reaches 17.0 feet NGVD.
    - 500-cfs capacity pump station in the southwest corner of the impoundment directs NSID flow into the impoundment. The pump operates at elevation 7.3 feet NGVD and ceases at elevation 7.0 feet NGVD.
3) Discharges: Outflow structure capacity = 700 cfs. This structure consists of three, 4-foot diameter, 70 feet long gated culverts.
    - Structure operates when Hillsboro Canal stages <7.0 feet NGVD and ceases to discharge when the canal reaches 7.5 feet NGVD.
4) An emergency overflow spillway is designed as a lower section of the levee to maintain impoundment levee integrity. The emergency overflow spillway invert

elevation is 1 foot above the maximum normal operating elevation. The spillway discharges into the Hillsboro Canal.

5) Thirty (30) 5 MGD ASR injection wells (total capacity 150 MGD or about 230 cfs) are located inside of the proposed eastern and southern perimeter levees. The horizontal supply wells are located inside the impoundment. A portion of the horizontal ASR wells have been relocated to the south bank of Hillsboro Canal – east of southern compartment – and on the east side of southern compartment to capture seepage.
    - Water from the horizontal supply wells injects into the ASR wells when stages in the impoundment are greater than 12.0 feet NGVD (1.0 feet of depth).
6) Increase conveyance of Hillsboro Canal by deepening cross section from inflow structure eastward to LWDD E-2 Canal to handle increased pump capacity.

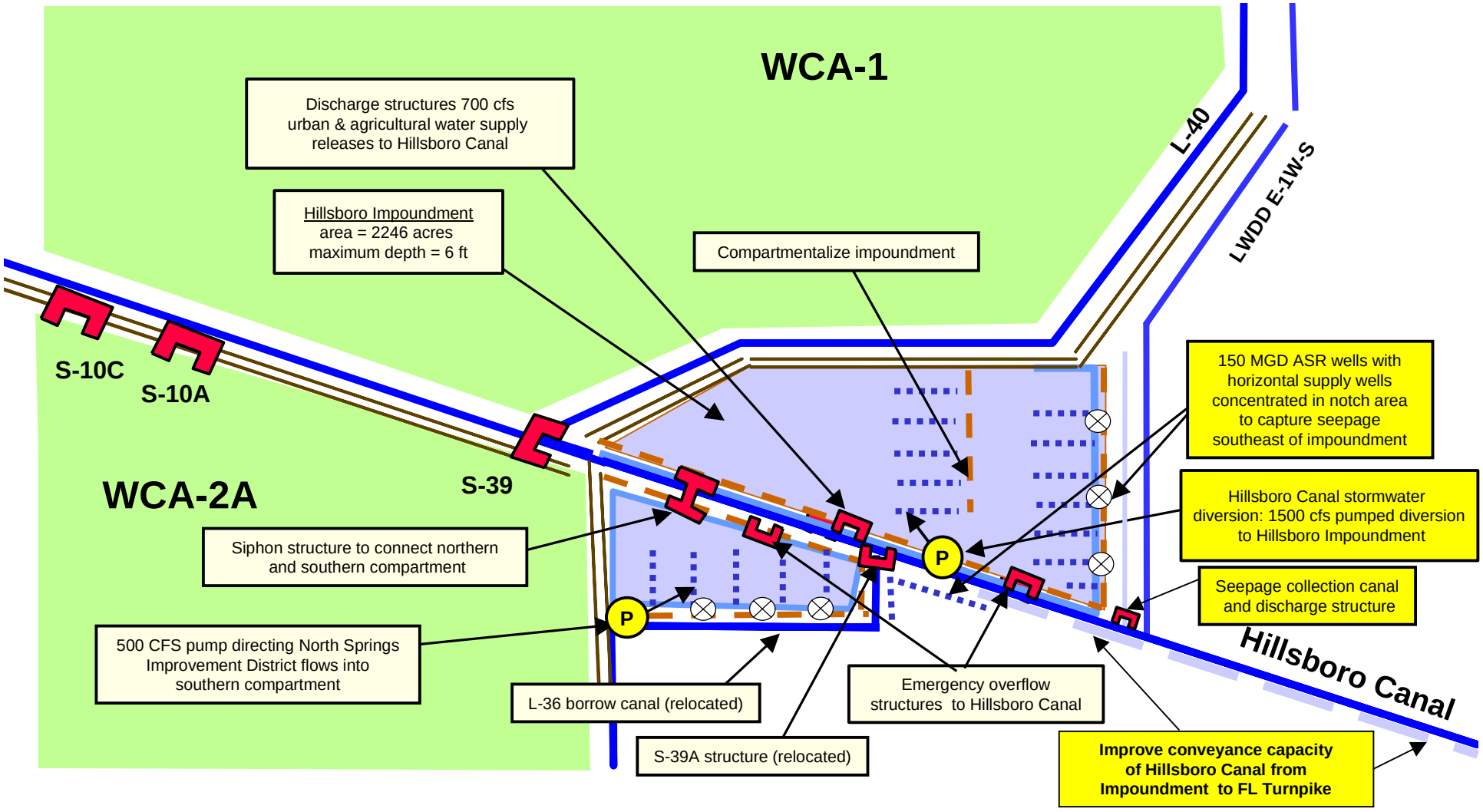
Location: The Water Preserve Area Land Suitability Analysis previously identified 2246-acre site.

Counties: Palm Beach

Summary of modifications from Alternative 2: Impoundment inflow pump station capacity on Hillsboro Canal is increased to 1500 cfs and Hillsboro Canal conveyance is increased from pump station eastward to LWDD E-2 Canal. A portion of the horizontal ASR wells are relocated to the south bank of Hillsboro Canal -east of southern compartment-and the east side of the southern compartment to reduce seepage to adjacent areas. The total ASR capacity at the site remains the same (150 MGD). All structures added in Alternative 2 for studying effects of raising LWDD E-1W-S Canal on seepage from WCA-1 are removed and a separate seepage canal on the eastern border of the northern impoundment is provided. Seepage canal elevation is maintained by gravity (fixed weir) to Hillsboro Canal and backpumping into impoundment

Assumptions and related considerations:

1) Recovery rate of 70 percent for water that is stored by ASR.
2) Conveyance of North Springs Improvement District flows to the Hillsboro Canal is maintained.
3) Conveyance improvement to Hillsboro Canal may enable secondary canal improvements.



WPA Feasibility Study - ALT 3
Hillsboro Impoundment and ASR
WPA Component Map 5

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LEGEND

- P — Proposed Pump
- Water Control Structure
- Proposed Levee
- Trench for ASR
- ASR Well
- Conveyance Improvement
- Seepage Collection Canal

N

Not to Scale

Component YY

Geographic Region: Water Conservation Area -Water Preserve Area - Lake Belt

Component Title: Divert WCA 2 flows to Central Lake Belt Storage - SEE WPA COMPONENT MAP 6

Purpose: Capture excess water in Water Conservation Area 2B (WCA 2B) to reduce stages above their target levels in WCA 2B and to divert water through improved L-37 and L-33canals to 1) North East Shark River Slough (NESRS) to meet targets or 2) Central Lake Belt Storage Area.

Operations Summary: Surface water in WCA 2B above target levels overflows through 3 structures along L-35 and L-35A to the North New River Canal. It is pumped to the L-37 borrow canal along with seepage from WCA 2B. The North New River Canal, L-37 and L-33 canals are improved to accept this additional flow along with the seepage collected from WCA 3. This water supplies 1) NESRS if the Slough is below target levels or 2) an in-ground reservoir located south of the confluence of the L-33 and C-6 canals. It is referred to as the Central Lake Belt Storage Area (CLBSA). SEE COMPONENT S.

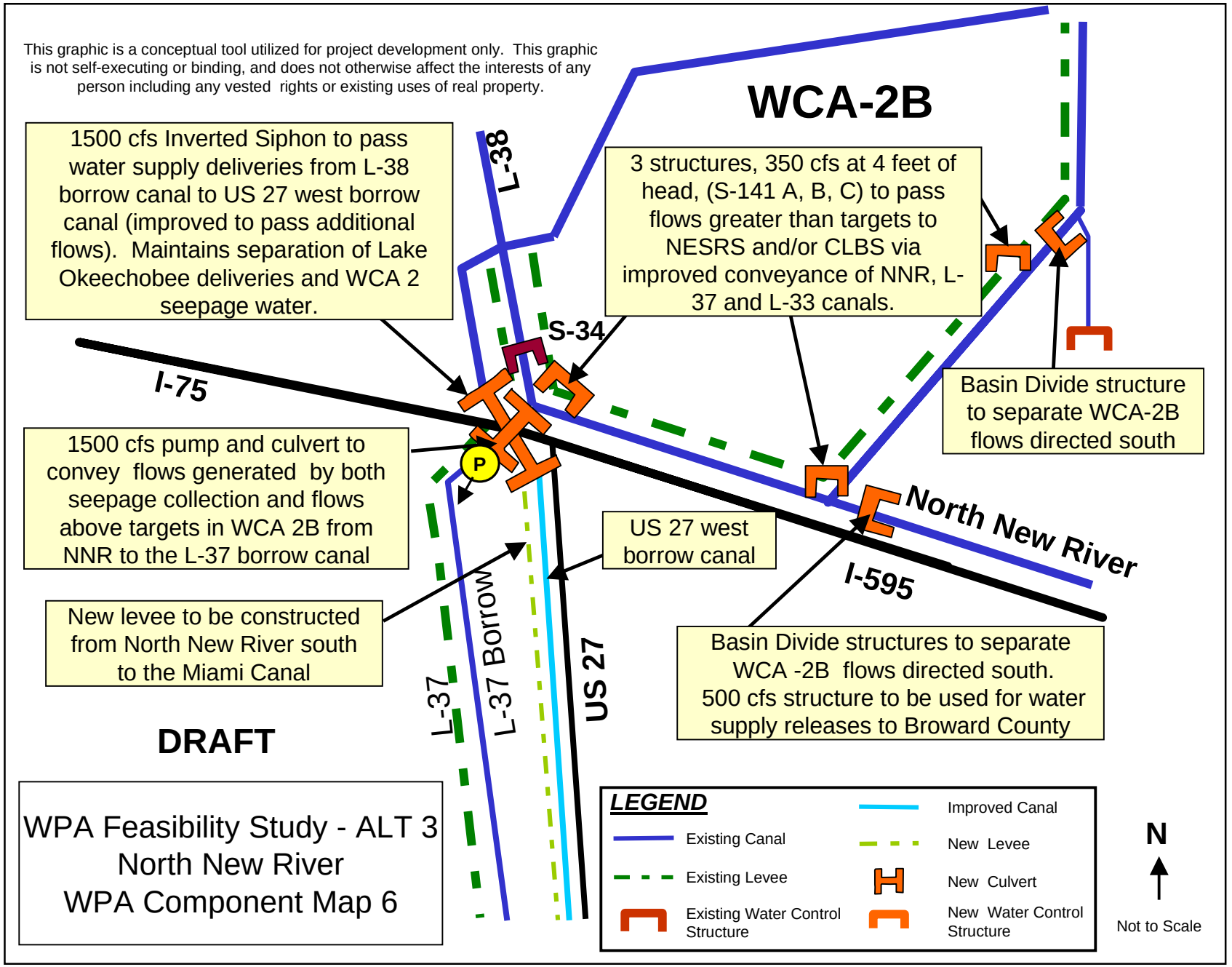
Detailed Design and Operation:
1) 3- diversion structures with 120 cfs capacity @0.5 feet of head and 350 cfs capacity @4.0 feet of head along the southern perimeter of WCA 2B to pass flows greater than targets.
2) Structure S-124 is removed. A basin divide structure to be located immediately downstream of the confluence of L-35A and L-35 canals with a control elevation of 4.25 feet NGVD in order to separate Water Conservation Area 2B overflow from water supply deliveries made via the North New River Canal.
3) Construct a divide structure northeast of the easternmost WCA 2B diversion structure with a crest at elevation 6.3 feet NGVD to separate WCA 2B flows that are directed south.
4) 1500 cfs pump station and culvert to divert overflow and seepage from WCA-2B collected in the L-38 East, L-35 and L-35A canals to the L-37 Canal. Pump on when water levels in WCA 2B are 1.25 feet above target and pump off when water levels in WCA 2B drop below 1.0 foot above target.
5) Improve L-37 canal to allow a conveyance capacity of 1500 cfs to facilitate flows from WCA-2B. Similarly, improve L-33 Canal to allow a conveyance capacity of 2000 cfs to facilitate flows extending from L-37 Canal plus 500 cfs diversion from WCA-3A.
6) Remove S-9XN and S-9XS.

Location: The overflow structures are located along the southern levee of WCA 2B. L-37 and L-33 canal improvements are located east of the Protective levees and 0.5 mile west of US Highway 27 between the North New River Canal and the Miami (C-6) Canal.
Counties: Broward

Summary of modifications from Alternative 2: No change from Alternative 2.

Assumptions and related considerations:

1) Prioritization of use of Central Lake Belt Storage Area water.
2) Telemetry systems are required for all operable structures and pump station.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WCA-2B
1500 cfs Inverted Siphon to pass water supply deliveries from L-38 borrow canal to US 27 west borrow canal (improved to pass additional flows). Maintains separation of Lake Okeechobee deliveries and WCA 2 seepage water.
3 structures, 350 cfs at 4 feet of head, (S-141 A, B, C) to pass flows greater than targets to NESRS and/or CLBS via improved conveyance of NNR, L-37 and L-33 canals.
L-38
S-34
I-75
Basin Divide structure to separate WCA-2B flows directed south
1500 cfs pump and culvert to convey flows generated by both seepage collection and flows above targets in WCA 2B from NNR to the L-37 borrow canal
P
North New River
US 27 west borrow canal
I-595
New levee to be constructed from North New River south to the Miami Canal
L-37
L-37 Borrow
US 27
Basin Divide structures to separate WCA -2B flows directed south. 500 cfs structure to be used for water supply releases to Broward County
DRAFT
WPA Feasibility Study - ALT 3
North New River
WPA Component Map 6
LEGEND
Existing Canal
Existing Levee
Existing Water Control Structure
Improved Canal
New Levee
New Culvert
New Water Control Structure
N
Not to Scale

Component O

Geographic Region: Water Preserve Area - Broward County

Component Title: Water Conservation Area (WCA) 3A and 3B Levee Seepage Management – SEE WPA COMPONENT MAPS 7 and 8

Purpose: Reduce seepage from WCAs 3A and 3B to improve hydropatterns within the Water Conservation Areas by allowing higher water levels in the borrow canals and maintaining longer inundated durations within the marsh areas that are located east of the WCAs and west of US Highway 27. Seepage from the WCAs and marshes is collected and directed south into the Central Lake Belt Storage Area. This maintains flood protection and the separation of seepage water from urban runoff originating in the Western C-11 Basin and Lake Okeechobee water supply deliveries.

Operations Summary: The L-37 and L-33 borrow canals are held at higher stages as part of the WCA 3A and 3B seepage management system. Additionally, the borrow canals are also used to convey flows as part of the WCA-2B diversion flow system (Component YY). Seepage and canal flows collected in the L-37 and L-33 borrow canals are directed south to the North East Shark River Slough to meet its demands; to the Central Lake Belt Storage Area to store; or returned to WCA 3A through the proposed critical project pump S-9A.

Detailed Design and Operation: New canal with levees (US27W) are constructed west of US Highway 27 from the North New River Canal to the Miami (C-6) Canal. The canal and levees serve two purposes: (1) to separate seepage water from the urban runoff collected in the Western C-11 Diversion Impoundment and Canal (Component Q) and (2) maintain separation from Lake Okeechobee dry season delivery waters.

1) The L-37 and L-33 borrow canals are controlled at higher stages to control seepage from WCA 3A and 3B.
2) The northern Everglades Buffer Strip (a marsh area) has a controlled maximum elevation of 7.5 ft NGVD for the wet season and 6.5 ft NGVD for the dry season. A new 50 cfs gravity control structure in the L-37 Canal just east of the S-9 pump station is used to maintain these levels and provide operational flexibility. The discharge into the C-11 Canal is diverted or return pumped into WCA-3A by the S-9A pump station (critical project).
3) The southern Everglades Buffer Strip has a controlled maximum elevation of 6.5 ft NGVD for the wet season and 5.5 ft NGVD for the dry season. A 2000 cfs gated spillway is used to maintain these levels, as well as to control WCA 2B, 3A and 3B flows to the south via the L-30 borrow canal or the Miami Canal (C-6).
4) A divide structure is added in the C-11 Canal, east of US Highway 27 to maintain a headwater stage of 5.0 feet NGVD and the separation of seepage water from urban runoff. Seepage water west of the divide structure is backpumped into WCA-3A by the new critical project pump station S-9A. Water from the C-11 West Basin, east of the divide structure is backpumped into the C-11 Impoundment and may be diverted

south to the North Lake Belt Storage Area or indirectly to the C-9 Impoundment as storage availability exists.

Location: Seepage collects in borrow canals along the existing eastern protective levees adjacent to WCA 3. Divide structure is located in the C-11 Canal east of US Highway 27.
Counties: Broward

Summary of modifications from Alternative 2: Add 50 cfs fixed crest weir to transfer water from Everglades Buffer Strip to WCA 3A. Modify control elevations for L-33 and L-37 borrow canals to vary hydroperiod in the northern and southern Everglades Buffer Strips.

Assumptions and related considerations:
1) It is assumed that the seepage from the Water Conservation Areas meets the water quality standards necessary to achieve ecosystem restoration.

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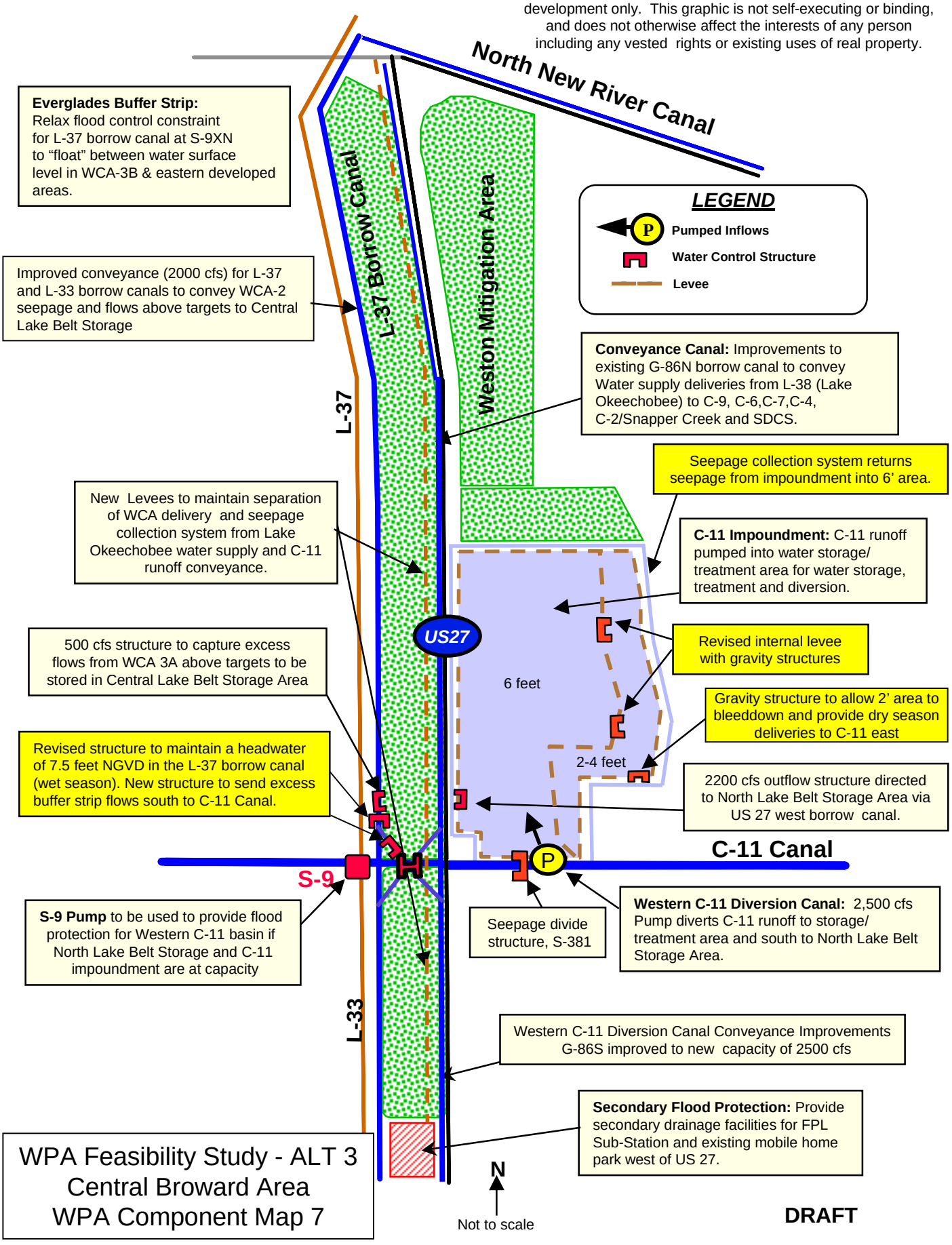

Everglades Buffer Strip: Relax flood control constraint for L-37 borrow canal at S-9XN to "float" between water surface level in WCA-3B & eastern developed areas.

Improved conveyance (2000 cfs) for L-37 and L-33 borrow canals to convey WCA-2 seepage and flows above targets to Central Lake Belt Storage

Conveyance Canal: Improvements to existing G-86N borrow canal to convey Water supply deliveries from L-38 (Lake Okeechobee) to C-9, C-6,C-7,C-4, C-2/Snapper Creek and SDCS.

Seepage collection system returns seepage from impoundment into 6' area.

New Levees to maintain separation of WCA delivery and seepage collection system from Lake Okeechobee water supply and C-11 runoff conveyance.

C-11 Impoundment: C-11 runoff pumped into water storage/ treatment area for water storage, treatment and diversion.

500 cfs structure to capture excess flows from WCA 3A above targets to be stored in Central Lake Belt Storage Area

Revised internal levee with gravity structures

Gravity structure to allow 2' area to bleeddown and provide dry season deliveries to C-11 east

Revised structure to maintain a headwater of 7.5 feet NGVD in the L-37 borrow canal (wet season). New structure to send excess buffer strip flows south to C-11 Canal.

2200 cfs outflow structure directed to North Lake Belt Storage Area via US 27 west borrow canal.

S-9 Pump to be used to provide flood protection for Western C-11 basin if North Lake Belt Storage and C-11 impoundment are at capacity

Seepage divide structure, S-381

Western C-11 Diversion Canal: 2,500 cfs Pump diverts C-11 runoff to storage/ treatment area and south to North Lake Belt Storage Area.

Western C-11 Diversion Canal Conveyance Improvements G-86S improved to new capacity of 2500 cfs

Secondary Flood Protection: Provide secondary drainage facilities for FPL Sub-Station and existing mobile home park west of US 27.

WPA Feasibility Study - ALT 3
Central Broward Area
WPA Component Map 7

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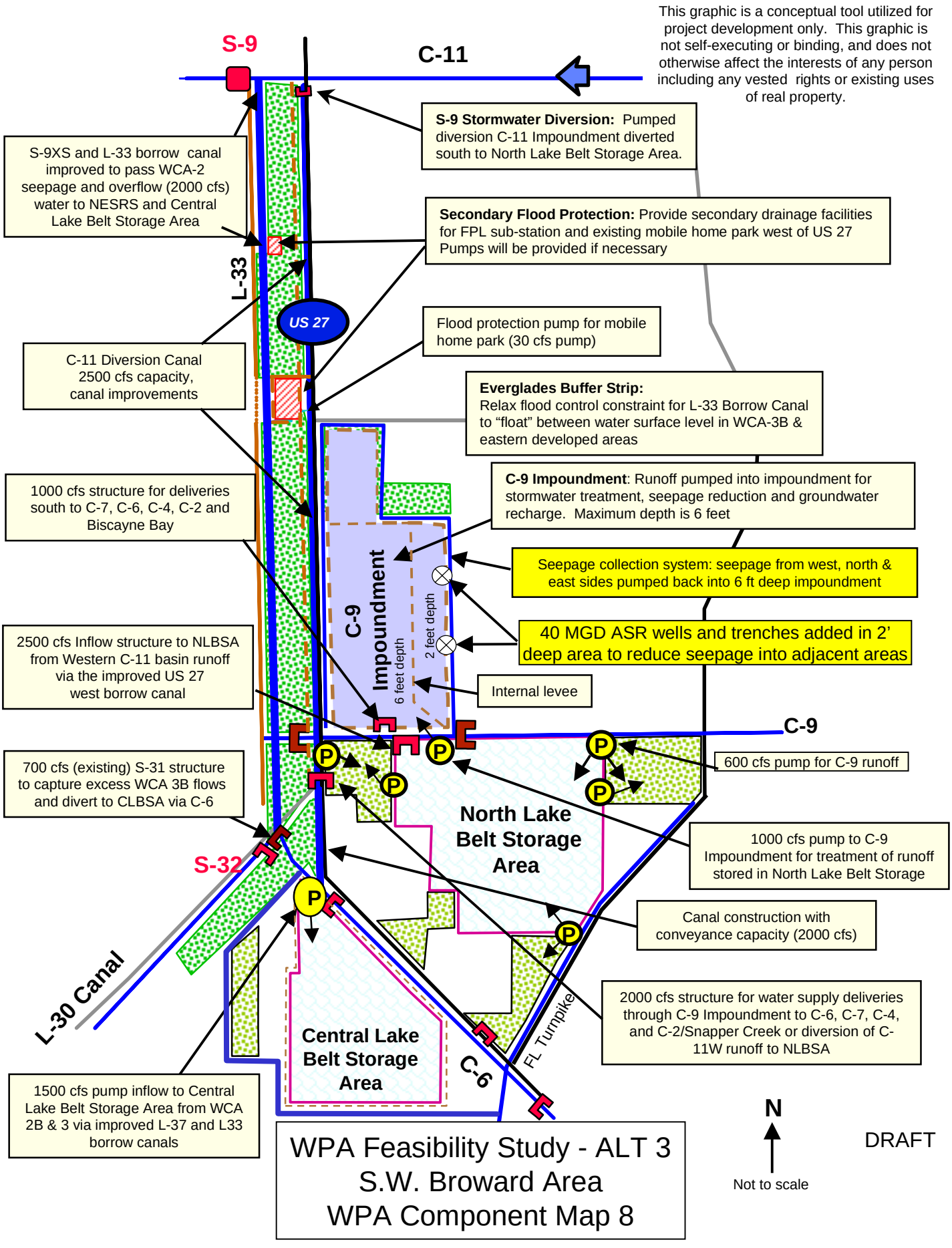

This graphic is a conceptual tool utilized for project development only. This graphic is not self-executing or binding, and does not otherwise affect the interests of any person including any vested rights or existing uses of real property.
S-9
C-11
S-9 Stormwater Diversion: Pumped diversion C-11 Impoundment diverted south to North Lake Belt Storage Area.
S-9XS and L-33 borrow canal improved to pass WCA-2 seepage and overflow (2000 cfs) water to NESRS and Central Lake Belt Storage Area
Secondary Flood Protection: Provide secondary drainage facilities for FPL sub-station and existing mobile home park west of US 27 Pumps will be provided if necessary
L-33
US 27
Flood protection pump for mobile home park (30 cfs pump)
C-11 Diversion Canal 2500 cfs capacity, canal improvements
Everglades Buffer Strip: Relax flood control constraint for L-33 Borrow Canal to "float" between water surface level in WCA-3B & eastern developed areas
1000 cfs structure for deliveries south to C-7, C-6, C-4, C-2 and Biscayne Bay
C-9 Impoundment: Runoff pumped into impoundment for stormwater treatment, seepage reduction and groundwater recharge. Maximum depth is 6 feet
Seepage collection system: seepage from west, north & east sides pumped back into 6 ft deep impoundment
C-9 Impoundment
6 feet depth
2 feet depth
40 MGD ASR wells and trenches added in 2' deep area to reduce seepage into adjacent areas
2500 cfs Inflow structure to NLBSA from Western C-11 basin runoff via the improved US 27 west borrow canal
Internal levee
C-9
600 cfs pump for C-9 runoff
700 cfs (existing) S-31 structure to capture excess WCA 3B flows and divert to CLBSA via C-6
North Lake Belt Storage Area
1000 cfs pump to C-9 Impoundment for treatment of runoff stored in North Lake Belt Storage
S-32
Canal construction with conveyance capacity (2000 cfs)
L-30 Canal
2000 cfs structure for water supply deliveries through C-9 Impoundment to C-6, C-7, C-4, and C-2/Snapper Creek or diversion of C-11W runoff to NLBSA
Central Lake Belt Storage Area
C-6
FL Turnpike
1500 cfs pump inflow to Central Lake Belt Storage Area from WCA 2B & 3 via improved L-37 and L33 borrow canals
WPA Feasibility Study - ALT 3
S.W. Broward Area
WPA Component Map 8
N
Not to scale
DRAFT

Component Q

Geographic Region: Water Preserve Area - Broward County

Component Title: Western C-11 Diversion Impoundment and Canal -- to North Lake Belt Storage Area - SEE WPA COMPONENT MAPS 7

Purpose: Divert untreated runoff from the C-11 West Basin that is presently discharged into Water Conservation Area 3A into the C-11 Impoundment prior to sending it south to the North Lake Belt Storage Area (NLBSA).

Operations Summary: Divert runoff previously pumped into WCA-3A from the C-11 West Basin into the C-11 Impoundment until full, then send it to the NLBSA. If storage capacity is not available in the C-11 Impoundment, the C-9 Impoundment or the NLBSA, then the S-9 pump station is used to provide existing flood protection by pumping runoff into WCA-3A.

To improve groundwater elevations in the C-11 East Basin and Pond Apple Slough (east of S-13A) during dry seasons S-13A is opened and deliveries from C-11 Impoundment are made when stage at S-13 is < 3.5 ft NGVD. If water is not available from C-11 Impoundment, then deliveries are made by opening S-381 (critical project) and allowing seepage water to recharge the basin and prevent excessive dry-outs.

The 1734 acre impoundment is divided into two compartments, east and west. 1) A 453 acre wetland buffer is located along the eastern boundary. Water is stored at less than 2 foot deep on average, but can store a maximum of 4 feet of water for short durations. 2) A western compartment (1281 acres) can store water to a maximum depth of 6 foot. The east compartment improves seepage control and allows the relocation of permitted mitigation areas from the 6-foot deep compartment. Excess water is released first from the eastern compartment, then from the western compartment. The western compartment fills prior to the eastern compartment.

Detailed Design and Operation:

1) 2500 cfs diversion canal west of US Highway 27 between the C-11 and C-9 Canals and 2500 cfs conveyance capacity improvements to the C-9 Canal between S-30 and the diversion structure into NLBSA.
2) 1734-acre impoundment is surrounded by an 11-foot high external levee. 1281 acres has a maximum depth of 6 feet and 452 acres has a maximum depth of 2 feet.
3) A 7-foot high internal levee separates the western 6-foot deep storage compartment from the wetland buffer. Transfer of flow is accomplished by 3 sets of gated culverts each consisting of two 60-foot long 72-inch diameter culverts.
4) Inflows: A 2500 cfs capacity inflow pump in the C-11 Canal directs runoff to the C-11 Impoundment's western compartment first
    - dry season pump on elevation 4.0 ft NGVD and pump off elevation 3.7 ft NGVD;

- wet season pump on elevation 3.9 ft NGVD and pump off elevation 3.5 ft NGVD or when the impoundment reaches 6 feet of depth.

5) Discharges: 2500 cfs structure discharges from the impoundment to an improved US 27 West borrow canal when stages reach 4.0 ft NGVD. A gravity structure discharges water from the eastern compartment to the C-11 Extension Canal. When the impoundment at capacity, the eastern compartment discharges first and the western compartment discharges second.
6) Seepage collection canals is maintained by:
   - A 25 cfs seepage pump station (north and northeast boundary) operates at elevation 5.0 ft NGVD and ceases at 4.7 ft NGVD.
   - An 80 cfs seepage pump station (west boundary) operates at elevation 6.0 ft NGVD and ceases at 5.5 ft NGVD.
   - Southeastern boundary is controlled by the C-11 Extension Canal, an ungated canal from C-11 Canal.
7) The hydroperiod in the eastern compartment ranges between 1-1 ½ foot depth on average with dry down durations of not more than 2 months and water elevations dropping no more than 1 foot below natural grade for more than 1 month.
8) An emergency overflow spillway is designed as a lower section of the levee to maintain impoundment levee integrity. The emergency overflow spillway invert elevation is 1 foot above the maximum normal operating elevation. The spillway will discharge into the C-11 Canal.

Location: The diversion canal is located west of US Highway 27 between C-11 and C-9 Canals. The C-11 Impoundment is located northwest of the intersection of US Highway 27 and C-11 Canal.

Counties: Broward, Miami-Dade

Summary of modifications from Alternative 2: The east and west compartments locations have been modified. The eastern compartment has a maximum depth of 4 feet for temporary storage of large rain events. Its hydroperiod ranges between 1-1 ½ foot depth on average. The western, 6-foot deep compartment extends to the northern boundary. The western compartment fills first and the eastern buffer is drawn down first. The seepage canal along the southeastern boundary is improved and controlled at the same elevation as the C-11 Canal. Seepage canal elevations changed for the northeastern boundary. Revised operations for the C-11 Impoundment and S-13A provide dry season flows to the eastern C-11 Basin and Pond Apple Slough.

Assumptions and related considerations:

1) Flood protection component for FPL substation and mobile home park may be needed. For each facility, propose a 60 cfs capacity pump station with an on elevation of 6.0 feet NGVD and an off elevation of 5.0 feet NGVD.
2) Telemetry systems are required for all operable structures and pump stations.

Component R

Geographic Region: Water Preserve Area - Broward County

Component Title: C-9 Impoundment - SEE WPA COMPONENT MAP 8

Purpose: Treatment of water supply deliveries from the NLBSA to the C-9, C-6/C-7 and C-2/C-4 canals. Runoff is backpumped into the NLBSA from the western C-9 Basin and diverted flows from the C-11 Impoundment. The C-9 Impoundment provides treatment of urban runoff stored in the North Lake Belt Storage Area, groundwater recharge within the basin and seepage control of WCA 3 and buffer areas located west of the impoundment.

Operations Summary: In Alternative 3, the design and operation of the C-9 Impoundment are modified. Excess runoff diverted from the C-11 Impoundment is delivered directly into the North Lake Belt Storage Area from the US Highway 27 west borrow canal. The C-9 Impoundment is divided into three compartments. The west compartment can reach a 6-foot maximum depth with two shallower step down areas located to the north and east. The north and east compartments will store less than 2 foot of water on average and can store a maximum of 4 foot of water for short periods. During dry periods, stormwater stored in the NLBSA is pumped into the C-9 Impoundment for treatment (if necessary) and then released to provide water supply deliveries based on salinity control targets to the C-9, C-7, C-6, C-4 and C-2 canals. Seepage from the C-9 Impoundment is collected and returned to the impoundment or feed to ASR pumps.

Detailed Design and Operation:

1) 2091-acre impoundment is divided into 3 compartments west, east and north. West (1232 acres) can store a maximum of 6 feet deep, east (474 acres) and north (385 acres) can store a maximum of 4 foot deep water for short durations of time.
2) Inflows: A 1000 cfs capacity pump station from NLBSA. SEE COMPONENT XX.
    - Pump ooperates when 1 of 3 conditions occur: (1) water supply deliveries are needed to C-9, C-6, C-7, C-4 and C-2 canals and water level in the NLBSA is above –15.0 ft NGVD; (2) when flows from C-11 Impoundment are directed to NLBSA and storage is available in C-9 Impoundment; or (3) when the water in the C-9 Impoundment is at or below ground surface.
    - Pump ceases to operate when 1 of 3 conditions occur: (1) water deliveries to C-9, C-6, C-7, C-4 and C-2 canals are met; (2) diversion from C-11 Impoundment is terminated; (3) C-9 Impoundment returns to 0.5-foot depth; or (4) the C-9 Impoundment is full.
3) Discharges: Two gravity structures with a total capacity of 1150 cfs to C-9, C-6, C-7, C-4, and C-2 canals for water supply deliveries. One (1000 cfs) is located in the western portion of the impoundment and the other (150 cfs) is located in the eastern portion of the impoundment. The east and north compartments discharge prior to the west compartment.
4) Seepage Collection: A total of 300 cfs is recycled into the impoundment.
    - Seepage collects along the western side of the impoundment by a 100-cfs capacity pump station that operates at 5.0 feet and ceases at 4.5 feet NGVD.

- Seepage collects along the eastern side of the impoundment by a 100-cfs capacity pump station that operates at 3.0 feet and ceases at 2.5 feet NGVD.
- Seepage collects along the north side of the impoundment by a 100-cfs capacity pump station that operates at 4.25 feet and ceases at 4.0 feet NGVD.

5) Add 40 MGD ASR and horizontal wells along eastern boundary. Water is injected when stages are greater than 1-foot deep in the impoundment and NLBSA is receiving flows from the C-11 Impoundment. Water is recovered when stages in C-9 Canal are below 3.5 ft NGVD.
6) Add hyrdoperiod operations to north and east compartments. The hydroperiod ranges between 1-1 ½ foot depth on average with dry down durations of not more than 2 months and water elevations dropping no more than 1 foot below natural grade for more than 1 month.
7) An emergency overflow spillway is designed as a lower section of the levee to maintain impoundment levee integrity. The emergency overflow spillway invert elevation is 1 foot above the maximum normal operating elevation. The spillway will discharge into the C-9 Canal.

Location: Site identified by Water Preserve Area Land Suitability Analysis
Counties: Broward

Summary of modifications from Alternative 2: The west compartment can store 6 foot maximum depth while the east and north compartments have a maximum depth of 4-foot for short durations. Inflow pumps operate when flows are diverted from C-11 Canal and there is available storage. Water deliveries into the east and north compartments follow a hydroperiod schedule. Horizontal ASR wells (40 MGD) are located in the east compartment). Water is recovered when stages in C-9 Canal are below 3.5 NGVD and water is not available from the NLBSA. Seepage on the western boundary changes to a maximum of 5.0 ft NGVD. Seepage pump operates at 5.0 ft NGVD and ceases at 4.5 ft NGVD.

Assumptions and related considerations:
1) Additional treatment facility is needed if stored water is backpumped into Water Conservation Area 3A.
2) Telemetry systems are required for all operable structures and pump stations.

Component SS

Geographic Region: Everglades Agricultural Area (EAA) and Miami-Dade County

Component Title: Reroute Miami-Dade County Water Supply Deliveries – SEE WPA COMPONENT MAP 6

Purpose: Reroute water supply deliveries that are made to Miami-Dade County from the Miami and Tamiami Canals and Water Conservation Area 3 (WCA 3) to the North New River Canal due to the backfilling of the Miami Canal as part of the decompartmentalization of WCA 3.

Operations Summary: Send water supply deliveries from Lake Okeechobee to Miami-Dade County southeast through the North New River Canal in the Everglades Agricultural Area (EAA) (L-20, L-19, L-18) to S-150. From S-150 send deliveries into L-38W and at the southern terminus of L-38W south through a 1500 cfs capacity gated culvert to the improved borrow canal along the west side of US Highway 27.

Detailed Design and Operation:
1) Double the capacity of the North New River Canal (L-18 Canal) south of the proposed EAA Storage Reservoir (see Component G) to convey additional water supply deliveries to Miami-Dade County as necessary.
2) Double the capacities of S-351 and S-150 to pass additional water supply deliveries to Miami-Dade County as necessary.
3) Improve conveyance in the L-38W borrow canal to 2000 cfs as necessary.
4) Construct gated culverts with 1500 cfs capacity to pass water supply deliveries from the L-38 West borrow canal to the improved US Highway 27 west borrow canal (US27W). This maintains the separation of Lake Okeechobee water supply deliveries and WCA 2 seepage and overflow water.
5) Improve conveyance in the borrow canal on the west side of US Highway 27 between L-38W and the Miami Canal as necessary to pass the additional flows.
6) Lower pump intake at S-7 to an elevation of 8.0 feet NGVD.

Location: EAA and Water Conservation Area 3.
Counties: Palm Beach, Broward, and Miami-Dade

Summary of modifications from Alternative 1 or 2: No change from Alternative 1 or 2

Assumptions and related considerations:
1) Reduction in operational flexibility since there is only one delivery route to Miami-Dade County (back-up routes are not available in this Alternative).

Component XX

Geographic Region: Water Preserve Area - Miami-Dade County

Component Title: North Lake Belt Storage Area (NLBSA) - SEE WPA COMPONENT MAP 8 and 9

Purpose: In-ground reservoir to capture a portion of runoff from C-6, western C-11 and C-9 basins. The in-ground reservoir with perimeter seepage barrier allows storage of untreated runoff without concerns of ground water contamination. The stored water is used to maintain stages during the dry season in the C-9, C-6, C-7, C-4 and C-2 canals and to provide deliveries to Biscayne Bay to aid in meeting salinity targets.

Operations Summary: Runoff from the C-6 (west of gated culverts just east of the turnpike), western C-11, and C-9 basins are pumped first into the NLBSA reservoir. Inflows cease when the stage within the reservoir reaches approximately 5.0 ft NGVD or natural grade. Inflows may be directed to the C-9 Impoundment if storage capacity is available via the reservoir.

Outflows for water supply pumps from NLBSA into the WRA's prior to delivery to the C-9, C-6, C-7, C-4 and C-2 Canals, subject to water quality requirements. Water from the reservoir can be withdrawn down to a stage of -15 feet NGVD (up to 20 feet of working storage and maximum head on the seepage barrier).

Prioritization of outflows: If water levels in the NLBSA are from between +5.0 feet NGVD and 0.0 feet NGVD, flows discharge to Biscayne Bay via the C-2 Canal. If water levels in the NLBSA are from between 0.0 feet NGVD and –15 ft NGVD, flows discharge to C-9, C-6, C-7, C-4, and C-2 Canals and Biscayne Bay to prevent salt water intrusion.

The storage area is 2910 acres in size and captures a portion of the runoff from the C-6, C-9 and C-11 basins. (Note: SFWMM simulation assumes 5120 acres of surface area. To simulate equivalent working storage volumes, the simulated water levels are higher from those that are prescribed here.)

Detailed Design and Operations:

1) In-ground Reservoir: 2910 acres with subterranean seepage barrier extending down to -40 ft NGVD around the perimeter to enable drawdown below water table, prevent seepage and to prevent water quality impacts. Rock quarries are not excavated or are backfilled with permeable material to –35 ft NGVD and the bottom lined with an impermeable material.
2) Inflow Structures: 2500 cfs gravity structure at 0.5 feet head for diversion of flow from the C-11 Impoundment. 600 cfs capacity pump station from C-9 Canal (pump on 3.0 ft NGVD and pump off 2.5 ft NGVD). 300 cfs capacity pump station from C-6 Canal west of the gated divide structure that maintains an upstream stage of 3.5 ft NGVD (pump on 3.5 ft NGVD and pump off 3.0 ft NGVD)
3) Outflow Structures: 1000 cfs capacity pump station.

- Pump operates when 1 of 3 conditions are identified: (1) level in the NLBSA is above –15.0 ft NGVD, water supply deliveries are needed to C-9, C-6, C-7, C-4 and C-2 canals, and water stored in the ASR system in the C-9 Impoundment is depleted; (2) when flows from C-11 are diverted to NLBSA and storage is available in C-9 impoundment; or (3) when water in the C-9 Impoundment is at or below ground surface.
- Pump ceases when water deliveries met, C-11 Impoundment diversion terminated, C-9 Impoundment returns to 0.5 foot depth, or C-9 Impoundment is full. Deliveries from NLBSA are assumed to be divided as follows: 48 percent to C-9 Impoundment, 5 percent to each southwest and west water distribution area (WRA), 16 percent to east WRA, and 17 percent to south WRA.

4) Southwest WRA design (214 acres): 100 cfs inflow pump (pump on between 5.0 and –15.0 feet NGVD in NLBSA when water supply deliveries are required to C-6, C-4 and C-2 canals), 100 cfs gravity discharge structure to the C-6 Canal and two, 180 cfs seepage control pumps on the perimeter seepage canal.
5) West WRA design (444 acres): 100 cfs inflow pump (pump on between 5.0 and –25.0 feet NGVD in NLBSA when water supply deliveries are required to C-6, C-4 and C-2 canals), 100 cfs gravity discharge structure to US 27 west borrow canal. Seepage from the western and southern sides of the WRA are collected and pumped back into the WRA by a 180-cfs capacity pump station with an on elevation of 3.5 feet and off elevation of 3.0 feet NGVD.
6) East WRA design (661 acres): 100 cfs capacity inflow pump station (pump on between 5.0 and –25.0 feet NGVD in NLBSA when water supply deliveries are required to C-9 Canal) and 100 cfs gravity discharge structure to the C-9 Canal. Seepage is collected by a canal along the south side of the WRA and discharges into the proposed canal that is located west of the turnpike (connecting the C-6 Canal with the NLBSA) where it ultimately is pumped back into the NLBSA.
7) South WRA (720 acres): 100 cfs capacity inflow pump station (pump on between 3.5 and 4.0 feet NGVD from C-6, off when full or C-6 less than 3.0 feet NGVD) and 100 cfs gravity discharge structure to the C-6 Canal. Seepage is collected by a canal along the perimeter of the WRA and discharges into the C-6 Canal.
8) A stage divide in the C-9 Canal is located east of the outflow structure from the C-9 Impoundment. It consists of a gated culvert with a headwater stage of 5.5 feet NGVD and a tailwater stage of 2.5 feet NGVD and a capacity of 500 cfs. It passes Lake Okeechobee water supply deliveries to the C-9 Canal when other sources are not available.
9) Canal: 800 cfs canal capacity - Water supply discharges are routed to C-4/C-2 via a canal being located east of the Snapper Creek canal (Northwest wellfield protection canal system).
10) Two 1400 cfs delivery structures, one each at the new canal's confluence with C-6 and C-4.

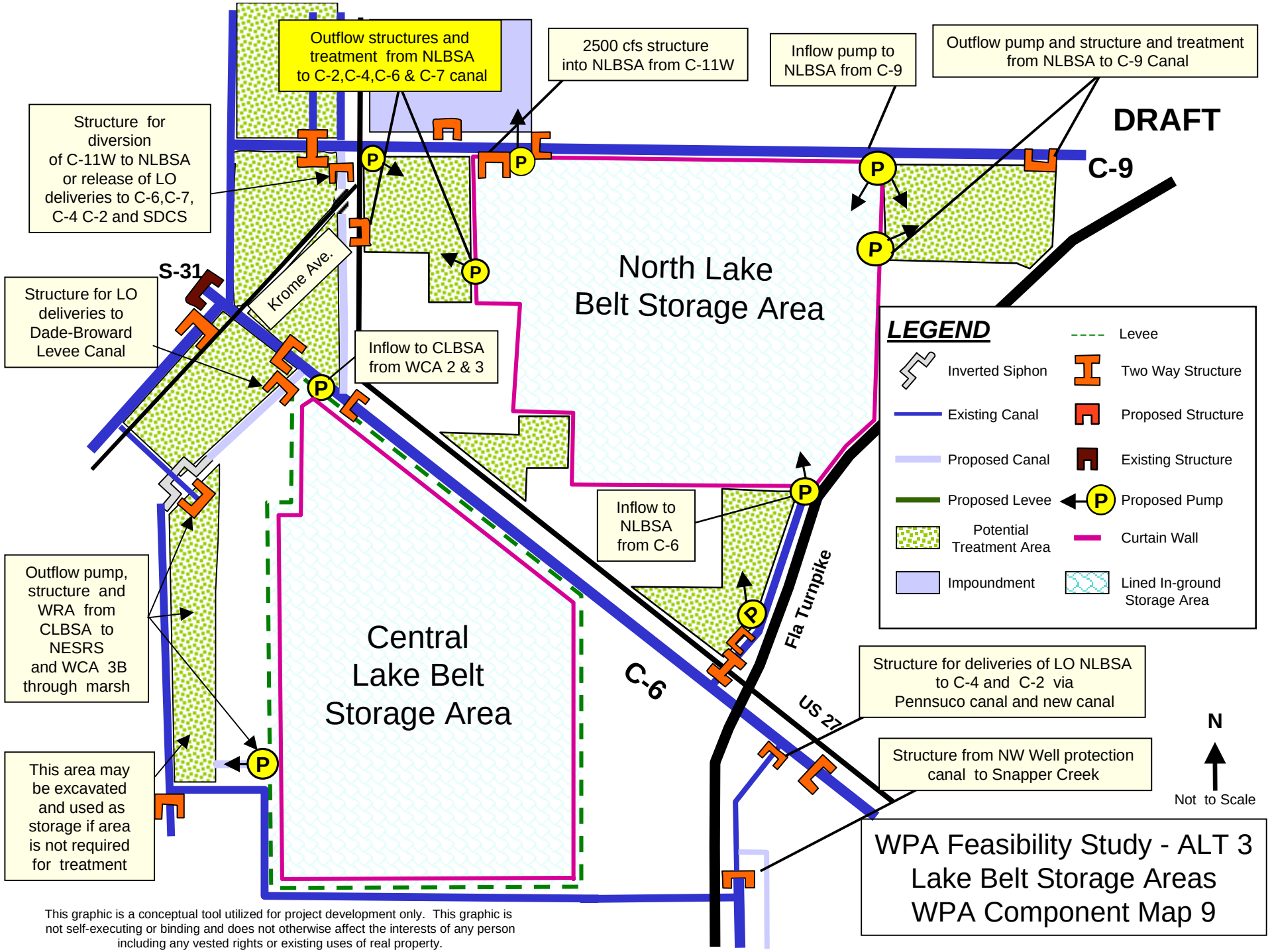
Location: Reservoir is located within the area proposed for rock mining by the Lake Belt Issue Team. It is sited north of Miami Canal (C-6) and South of the C-9 Canal to minimize impacts to the Northwest wellfield.

Counties: Miami-Dade

Summary of modifications from Alternative 2: Footprint of Storage Area and WRAs remain the same. South WRA is included to be used as excess above ground storage with water source by backpumping of C-6 canal. The bottom of the rock mined excavated pits will be backfilled with solid permeable material and an impermeable bottom will be provided at –35 ft NGVD. The perimeter curtains walls will tie into the impermeable bottom and extend to a depth of –40 ft NGVD.

Assumptions and related considerations:

1) No adverse effect of a subterranean wall on Miami-Dade County's NW wellfield.
2) Treatment facility is needed if stored water is backpumped to the Everglades.
3) All water quality considerations are addressed regarding releases from the reservoir to the water supply wellfields.
4) Impacts on the cone of influence of the Northwest Wellfield and its effect on wetland mitigation around the wellfield.
5) Limestone Filter Treatment system within the NLBSA may be developed through use of compartmentalization of rock mining excavation pattern.
6) Telemetry systems are required for all operable structures and pump stations.
7) Any specific water quality considerations regarding capture of C-6 basin runoff are addressed during the detailed design stage.



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Component ZZ

Geographic Region: Water Conservation Area -Water Preserve Area - Lake Belt

Component Title: Divert WCA 3 flows to Central Lake Belt Storage Area – SEE WPA COMPONENT MAP 8

Purpose: Capture excess in Water Conservation Area 3A (WCA 3A) and WCA 3B to reduce stages above target stages in Water Conservation Area 3 and to divert water through modified structures at S-9 and S-31 to the Central Lake Belt Storage Area via the L-33 borrow canal.

Operations Summary: When surface water in WCA 3B exceeds target depths by 0.1 feet, it will be diverted to the Central Lake Belt Storage Area via the L-33 borrow canal. When surface water in WCA 3A near S-9 exceeds target depths by 1.0 foot, water will be diverted to the Central Lake Belt Storage Area via the L-33 borrow canal.

Detailed Design and Operation:
Outflow Structures:

- 500 cfs structure @ 2.0 feet of head (new structure) at S-9 (WCA 3A).
- 700 cfs structure (modify existing S-31 if necessary) (WCA 3B)

Location: The eastern levees of WCA 3.
Counties: Broward and Miami-Dade

Summary of modifications from Alternative 1 or 2: No change from Alternative 1 or 2

Assumptions and related considerations:
1) Prioritization of use of Central Lake Belt Storage Area water.
2) Telemetry systems are required for all operable structures and pump stations

Component S

Geographic Region: Water Preserve Area – Miami-Dade County

Component Title: Central Lake Belt Storage Area (CLBSA)– SEE WPA COMPONENT MAPS 9 and 10

Purpose: In-ground reservoir to receive excess water and seepage from Water Conservation Areas (WCA) 2B, 3A and 3B. The in-ground reservoir, with perimeter seepage barrier, allows storage of large quantities of water without groundwater seepage losses in this highly transmissive region. The water being stored in CLBSA is provided to 1) North East Shark River Slough (NESRS), 2) Water Conservation Area 3B, and 3) to supply flows to Biscayne Bay when available.

Operations Summary: Inflows from the L-33 borrow canal (Component ZZ) are through a 1500 cfs capacity pump station. Inflows cease when stages reach approximately elevation 21.0 feet NGVD (16 feet above adjacent land elevation).

Outflows for water deliveries are pumped through a polishing marsh cell prior delivery to NESRS via the L-30 borrow canal and a reconfigured L-31 N borrow canal (Component U). Deliveries of water to NESRS to meet targets occur when NESRS drops below trigger levels and target hydroperiods simulations call for NESRS to be inundated. CLBSA delivers water to WCA 3B through a polishing marsh cell via the L-30 borrow canal to inundate the eastern area of WCA 3B to a 6 inch depth when triggers call for deliveries. This delivery occurs when WCA 3B drops below 6 inches above ground and target hydroperiods simulations indicate inundation in WCA 3B. When available, outflows are directed to Biscayne Bay through discharges to Snapper Creek at the Turnpike.

Water supply from the reservoir is withdrawn down to elevation –15.0 feet NGVD (up to 36 feet of working storage and maximum head on seepage barrier). The excavation pit is filled with permeable material to –35 feet NGVD and the bottom lined with an impermeable material.

Prioritization of Operations: If water levels in the CLBSA are from between +21.0 feet NGVD and -15.0 feet NGVD, flows discharge to NESRS. If water levels in the CLBSA are from between +21.0 feet NGVD and -15 feet NGVD, flows discharge to WCA 3B.

The storage area is 3958 acres in size and is used to capture flows above NSM levels within WCAs 2B, 3A and 3B. (Note: SFWMM simulation assumes 5120 acres of surface area. To simulate equivalent working storage volumes, the simulated water levels are slightly lower from those prescribed here.)

Detailed Design and Operation:

1) Reservoir: 3958 acres with subterranean seepage barrier extending down to -40 feet NGVD around the perimeter to enable drawdown during dry periods, to prevent seepage and to prevent water quality impacts on the adjacent Miami-Dade NW

wellfield. Fill bottom of excavation pit with permeable material and line bottom at –35 feet NGVD.

2) Inflow Structures:
   - 1500 cfs capacity pump station (pump on between +21.0 and –15.0 feet NGVD) from the C-6 Canal. Pump is operated when stages in WCA 2A, 3A and 3B are above targets in those respective WCAs.
   - 1500 cfs gravity structure @ 0.5 feet head east of Krome Avenue. Located on the C-6 Canal to deliver WCA deliveries via L-37, L-33 borrow canals and S-31. This structure opens whenever WCA 2B, 3A and 3B stages are above NSM levels and Lake Okeechobee deliveries are not provided to the Dade-Broward Levee Borrow Canal just downstream of the structure on the C-6 Canal. This structure consists of a gated spillway to maintain an upstream stage of 7.0 feet NGVD when deliveries from the WCAs are not made to CLBSA.
3) Discharges:
   - 800 cfs capacity pump station from the CLBSA to NESRS via a 468-acre WRA and the L-30 Canal. Deliveries from CLBSA are directed to the WRA west of the CLBSA prior to discharge to NESRS and/or WCA 3B via the L-30 Canal. The pump operates when water elevations in NESRS trigger deliveries from CLBSA and when water levels in CLBSA are above -28 feet NGVD.
   - WRA's discharge to L-30 via an 800 cfs gravity structure. The structure is operated from 0.5 feet to 4 feet of head as a flow through discharge operated simultaneously with the outflow pump from CLBSA.
   - 1400 cfs (also see Dade-Broward Levee Component) structure is located downstream of the inflow pump is to be kept closed except for deliveries to coastal canals and the South Dade Conveyance System. The structure consists of a gated spillway to maintain an upstream stage of 7.0 feet NGVD.

Location: Reservoir is located within the area being proposed for rock mining by the Lake Belt Issue Team. It is sited south of the Miami Canal (C-6) and north of the Northwest Wellfield Delivery canal to minimize the impacts to the Northwest wellfield.

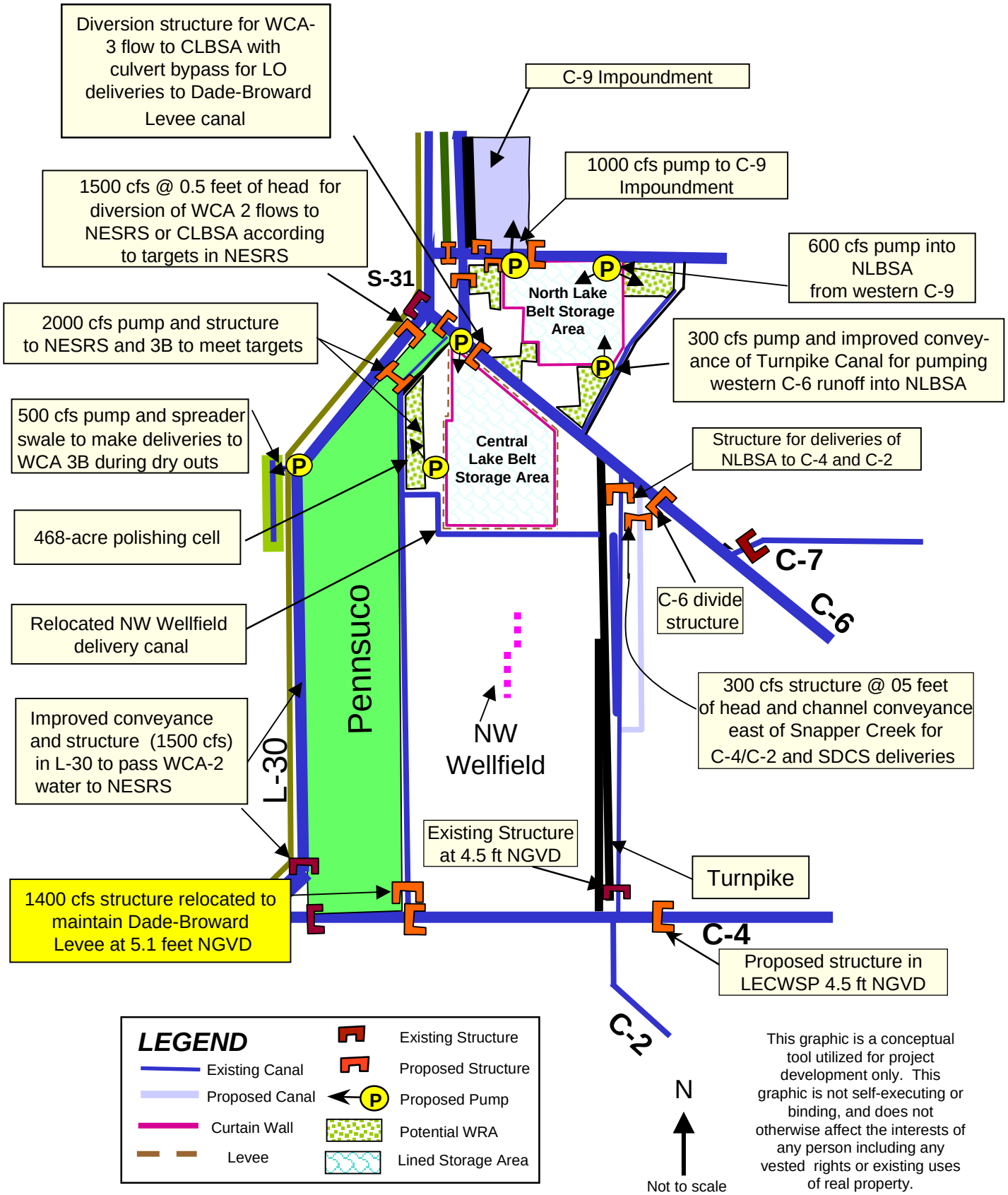
Counties: Miami-Dade

Summary of modifications from Alternative 2: Reduce the size of the Water Redistribution Area to 468 acres and connect it to the CLBSA. The bottom of the rock mined excavated pits will be backfilled with permeable material and an impermeable liner at the bottom will be provided at –35 ft NGVD. The perimeter curtains walls will tie into the impermeable bottom and extend to a depth of –40 ft NGVD.

Assumptions and related considerations:

1) No adverse effect of a subterranean wall on Miami-Dade County's NW wellfield.
2) Treatment facility is needed if stored water is backpumped to the Everglades (468-acre WRA).
3) All water quality considerations are addressed regarding releases from the reservoir to the water supply wellfields.
4) No Impacts on the cone of influence of the Northwest Wellfield and its effect on wetland mitigation around the wellfield.

5) Limestone Filter Treatment system within the reservoir may be developed through use of compartmentalization of rock mining excavation pattern.
6) Telemetry systems are required for all operable structures and pump stations.
7) Water Redistribution Area detention time requirements need to be determined. Pretreatment in reservoir may reduce the size requirements of the treatment area.



DRAFT

WPA Feasibility Study - ALT 3
North and Central Lake Belt Storage Areas
WPA Component Map 10

Component T

Geographic Region: Water Preserve Area – Miami-Dade County

Component Title: C-4 Structures

Purpose: Proposed structures (East and West) provide two separate benefits. The west structure controls water levels in the C-4 Canal at a higher elevation to reduce seepage losses from the Pennsuco Wetlands and areas to the west of the structure. The east structure reduces regional system water supply deliveries by diverting dry season stormwater flows to the C-2 Canal in order to increase recharge in several nearby coastal wellfields.

Operations Summary: The West structure maintains water levels at 6.5 feet NGVD for seepage control purposes and be capable of passing flood flows with a minimum of head loss and supplying water to the C-4 Basin to meet water supply demands. The East structure diverts dry season stormwater flows from the western C-4 Basin to the C-2 Canal to recharge the wellfields in the eastern C-2 Basin.

Detailed Design and Operations:

- West Structure - An operable lift-gate with an overflow elevation of 6.5 feet NGVD and a capacity of approximately 400 cfs (final design specifications to be determined in future detailed design and hydrologic and hydraulic modeling).

Location: Downstream of the Dade-Broward Levee in the C-4 Canal.

- East Structure - An operable lift-gate with an overflow elevation of 4.5 feet NGVD and a capacity of approximately 600 cfs (final design specifications to be determined in future detailed design and hydrologic and hydraulic modeling).

Location: In the C-4 Canal, downstream of the confluence of the C-2 and C-4 canals.

Summary of modifications from Alternative 2: No change from Alternative 2.

Assumptions and related considerations:

1) The benefits to WCA-3B that are associated with improved C-4 seepage control are directly related to the proposed G-356 pumpage (Modified Water Deliveries).
2) Head losses across the proposed structures do not inhibit passing flood releases when necessary.
3) A pump may be associated with the West structure if backpumping the C-4 Basin runoff to the Bird Drive Recharge Area becomes a component of the final alternative.

Component U

Geographic Region: Water Preserve Area - Miami-Dade County

Component Title: Bird Drive Recharge Area - SEE WPA COMPONENT MAP 11

Purpose: Captures runoff from the western C-4 Basin and accepts inflows from the West Miami-Dade Wastewater Treatment Plant (Treatment Plant). The objectives are to recharge groundwater and reduce seepage from the Everglades National Park (ENP) buffer areas by increasing water table elevations east of Krome Avenue. The facility also provides C-4 Basin flood peak attenuation and water supply deliveries to the South Dade Conveyance System and Northeast Shark River Slough (via seepage).

Operations Summary: Inflows from the western C-4 Basin and the Treatment Plant are pumped into the western portion of the recharge area. C-4 Basin runoff is pumped up to 200 cfs into the 4-foot deep compartment. A seepage management system operates around the east and southern perimeters of the recharge area with return to the western compartment. Discharges are prioritized to meet 1) South Dade Conveyance System demands, and 2) North East Shark River Slough demands. Regional system deliveries are also routed through the seepage collection canal system of the Bird Drive Recharge Area to the South Dade Conveyance System.

The eastern compartment is operated to maintain the desired Muhly grass prairie located in the southeast corner of the recharge area. The area is not counted as storage area. Water source for the area is rainfall and seepage from the western compartment. Excess water within the eastern compartment is discharged into conveyance/seepage canal and backpumped into the western compartment.

Detailed Design and Operation:

1) 3815 acre reservoir split into two compartments: 1) a western compartment (1721 acres) and 2) an eastern compartment (2094 acres) with average stages between 1-1 1/2 foot depth.
2) 5-foot high internal levee separates the two compartments.
3) Inflow structure: 200 cfs capacity pump station from the C-4 Canal.
4) Discharges:
   - Water supply gravity outflow structure with 200 cfs capacity at 1-foot of head from western compartment.
   - Water supply gravity outflow structure with 50 cfs capacity at 1-foot of head from eastern compartment.
6) Seepage Collection System: A 300 cfs capacity pump stations to control seepage collection canal at 5.3 feet NGVD. Seepage is returned to the west compartment
7) Delivery System:
   - 800 cfs capacity pump station to provide regional system deliveries to SDCS from the Dade-Broward Levee Canal.

- 800 cfs canal capacity to pass the regional system deliveries to the South Dade Conveyance System and collect seepage from the Bird Drive Recharge Area.
- A canal with 800 cfs capacity between the southern boundary of the Bird Drive Recharge Area to C-1 W Canal east of Krome Avenue.
- Relocate S-338 east of Krome Avenue and delivery canal.

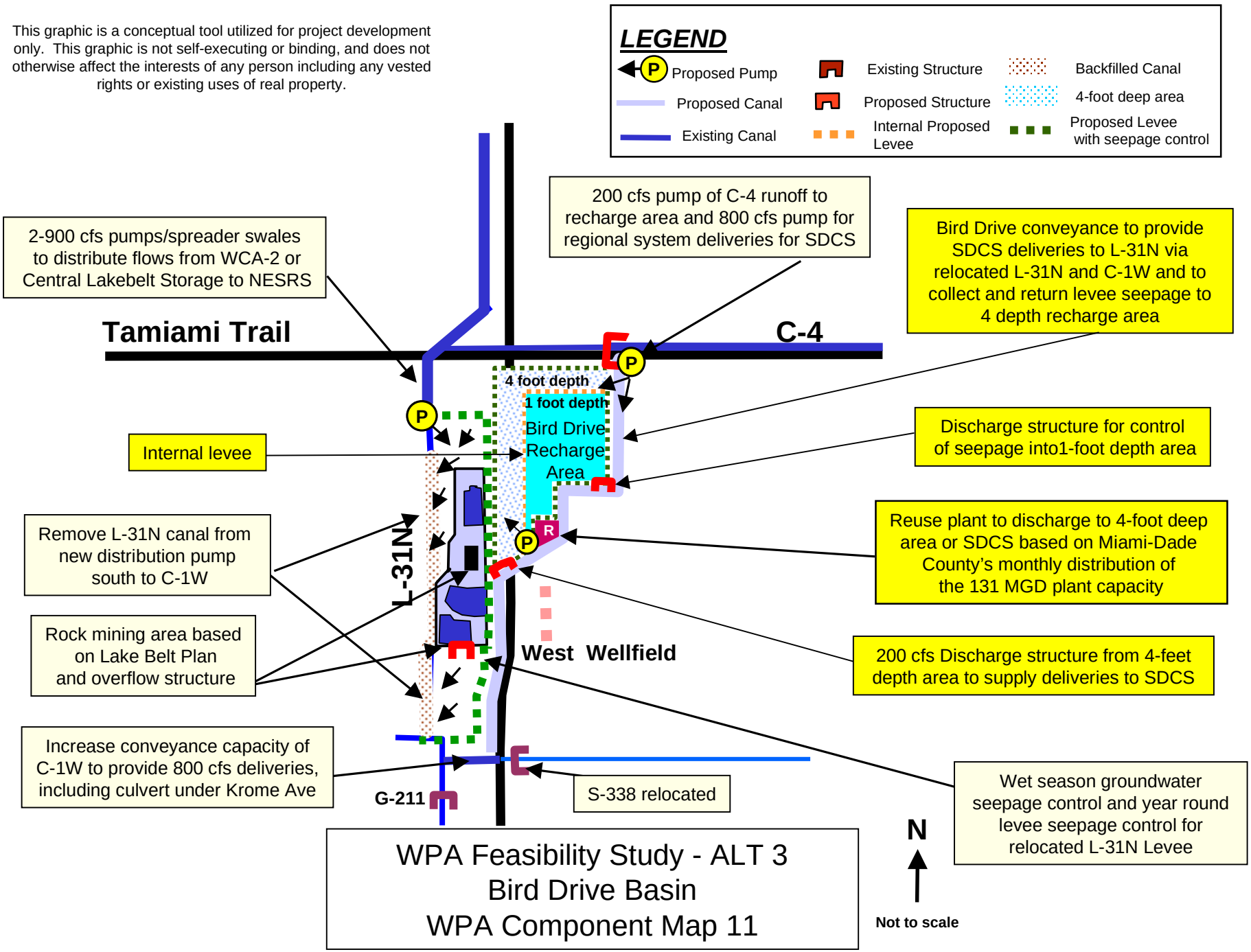
8) Inflows from the Treatment Plant to the western compartment are according to Miami-Dade County's projected monthly distribution for the Treatment Plant. It discharges into deep injection wells if the water depth in the western compartment is greater than 4 feet.
8) Add hyrdoperiod operations to east compartment. The hydroperiod ranges between 1-1 ½ foot depth on average with dry down durations of not more than 2 months and water elevations dropping no more than 1 foot below natural grade for more than 1 month.

Location: Northwestern 4 sections in Bird Drive Basin. This site was identified during the Water Preserve Area Land Suitability Analysis.
Counties: Miami-Dade

Summary of modifications from Alternative 2: The size of the Bird Drive Recharge Area has increased to 3815 acres and divided into a western 4-foot deep compartment (1721 acres) and an eastern 1-foot deep compartment (2094 acres). Inflows from the C-4 Basin are directed into the 4-foot deep compartment. Inflows from the Treatment Plant are directed into the 4-foot deep western compartment. Treatment Plant flows are equivalent to those in Alt D13R (131 MGD). Seepage collected is also returned to the 4-foot deep compartment.

Assumptions and related considerations:
1) Treatment facility is needed if seepage collected does not meet Everglades' standards.
2) Telemetry systems are required for all operable structures and pump stations.
3) Flood protection in the basin is not removed by the introduction of the West Dade Wastewater Treatment Plant inflows.
4) Regional-scale simulation using SFWMM 2mile X 2mile resolution is rather coarse for this local-scale feature. Specific land elevations in the Bird Drive Recharge Area are not precisely mimicked due to location and scale considerations in the SFWMM.

This graphic is a conceptual tool utilized for project development only. This graphic is not self-executing or binding, and does not otherwise affect the interests of any person including any vested rights or existing uses of real property.



Component BB

Geographic Region: Water Preserve Area - Miami-Dade County

Component Title: Dade Broward Levee / Pennsuco Wetlands - SEE WPA COMPONENT MAP 10

Purpose: Reduce seepage from southern WCA-3B and Pennsuco wetlands to the east and enhance hydroperiods in the Pennsuco. Also, an improved Dade Broward Levee enhances recharge to Miami-Dade County's Northwest Wellfield.

Operations Summary: A control elevation of 5.1 ft NGVD is held in the Dade-Broward Levee Canal. Improvements to the Dade-Broward Levee and associated conveyance system reduce seepage losses to the east and provide recharge to Miami-Dade County's Northwest Wellfield Seepage reduction enhances hydroperiods in Pennsuco wetlands and hold stages higher along southeastern WCA 3B. Recharging the conveyance features of the Dade-Broward levee from the regional system deliveries provides recharge to Miami-Dade County's Northwest Wellfield.

Detailed Design and Operation:

1) Improve the Dade-Broward Levee: Construct or improve the existing levee to a five-foot height with a twelve-foot top width and the east borrow canal with 14 feet depth, 110 foot bottom width, 1 to 1 (vertical to horizontal) side slopes, and improve existing conveyance to 1400 cfs.
2) 600 cfs divide structure in the C-6 Canal for regional system deliveries to C-6, C-7, C-4, and C-2 canals and the South Dade Conveyance System. This structure can control C-6 Canal water levels so that deliveries are able to be directed to the Dade-Broward levee borrow canal, the Central Lake Belt Storage Area or are released to the canals above.
3) 1400 cfs bypass structure and proposed canal from the C-6 Canal to the Dade-Broward Levee Canal to allow Lake Okeechobee deliveries south to provide recharge from the regional system via the improved US Highway 27 west canal.
4) 1400 cfs gravity structure in the Dade-Broward Levee borrow canal to be located south to the northern levee of the C-4 Canal. Deliveries are made to maintain a control elevation of 5.1 ft NGVD at this structure unless deliveries are being made to the SDCS. Tailwater elevations for this structure during deliveries to the SDCS is 4.5 ft NGVD.
5) 300 cfs gated culverts directs deliveries from L-30 Canal via the northern Dade-Broward Levee Canal under the new canal (constructed for Lake Okeechobee deliveries) to the Northwest Wellfield Protection Canal.

Location: Dade-Broward Levee, Pennsuco Wetlands, WCA-3B, the Central Lake Belt Storage Area and Miami-Dade County's Northwest Wellfield.

Counties: Miami-Dade

Summary of modifications from Alternative 2: Relocate structure in Dade-Broward Levee Canal south to the northern levee of the C-4 Canal. Control elevation increased to 5.1 ft NGVD.

Assumptions and related considerations:

1) Wellfield protection must be maintain through recharge of acceptable water quality.
2) Secondary structures within the recharge canals may be needed to provide seepage reduction and wellfield recharge desired.
3) The stage maintained in the Dade-Broward Levee conveyance canal is subject to change.
4) Treatment areas are provided to meet all water quality standards required, if necessary.

Component EEE

Geographic Region: Water Conservation Area -Water Preserve Area - Lake Belt

Component Title: Flows to Eastern Water Conservation Area (WCA) 3B from Central Lake Belt Storage Area – SEE WPA COMPONENT MAPS 6 and 10

Purpose: Captured excess surface water and seepage from Water Conservation Area 2B, 3A and 3B in Central Lake Belt Storage Area (CLBSA) are delivered to eastern WCA 3B during dry outs.

Operations Summary: Deliveries are made to maintain 6 inch depths in WCA 3B if NSM hydroperiod indicate WCA 3B water levels are at or above 6 inches and water is available in CLBSA. Deliveries from CLBSA occur through a wetland treatment cell and the L-30 borrow canal to a spreader swale system in the eastern areas of WCA 3B.

Detailed Design and Operation:

- 500 cfs capacity pump station from L-30 to eastern portion of WCA 3B.
- Spreader swale along eastern WCA 3B to convert 500 cfs to sheetflow
- Upgrade of 1500 cfs to 2000 cfs capacity for CLBSA deliveries to NESRS to accommodate additional flows to WCA 3B (SEE COMPONENT S5)

Location: The discharge point from L-30 borrow canal to WCA 3B is at the bend in the canal and is approximately 4.5 miles south of the intersection of the L-30 and the C-6 Canal.

Counties: Miami-Dade

Summary of modifications from Alternative 1: No change from Alternative 1

Assumptions and related considerations:

1) Prioritization of use of Central Lake Belt Storage Area water.
2) Telemetry systems are required for all operable structures and pump stations.